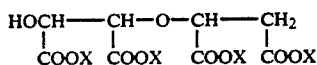


wherein X is H or a salt-forming cation. This material, also known as 3-oxa-1,2,4,5-pentane-tetracarboxylic acid, in either its acid or water-soluble salt form, is hereinafter referred to as "ODS." Preferred salt-forming cations for ODS include *alkali metal* (sodium, potassium, lithium), ammonium, C<sub>1</sub>-C<sub>4</sub> substituted ammonium and C<sub>1</sub>-C<sub>4</sub> alkanolamine.

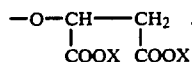
ODS is a known material which can be prepared by reacting maleic anhydride, maleic acid and/or derivation thereof in the presence of an alkaline earth metal catalyst. ODS, its preparation and its use as a detergent builder material are described more fully in Berg; U.S. Pat. No. 3,128,287; issued Apr. 7, 1964, and in Lamberti et al; U.S. Pat. No. 3,635,830; issued Jan. 18, 1972. Both of these patents are incorporated herein by reference.

Another type of operable ether carboxylate suitable for use in the builder compositions herein is that wherein in the above general formula A is -OH and B is H. This material comprises tartrate monosuccinic acid and its water-soluble salts. Such compounds have the general formula:

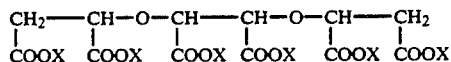


wherein X is H or a salt-forming cation. This material is either its acid or water-soluble salt form is hereinafter referred to as "TMS." Preferred salt-forming cations for TMS include alkali metal (sodium, potassium, lithium) ammonium, C<sub>1</sub>-C<sub>4</sub> substituted ammonium and C<sub>1</sub>-C<sub>4</sub> alkanolamine.

Another type of ether carboxylate which is related to TMS and which is suitable for use in builder compositions herein is the material of the broadly-defined structural formula wherein A is H and B is



Such a material comprises tartrate disuccinic acid and its water-soluble salts. Such compounds have the general formula:



wherein X is H or a salt-forming cation. This material is either its acid or water-soluble salt form is hereinafter referred to as "TDS." Preferred salt-forming cations for TDS are the same as those set forth hereinbefore for TMS.

Both TMS and TDS, can be synthesized by the catalyzed reaction of maleic acid salts with tartaric acid salts. Such a reaction, in fact, produces a mixture of tartrate monosuccinate and tartrate disuccinate with the relative amounts of tartrate monosuccinate and tartrate disuccinate in such a mixture depending on the molar ratio of the maleic and tartaric reactants used and upon the reaction conditions used. Accordingly, such a reaction can be used to form a two-component ether carboxylate mixture which can be used as the essential ether

carboxylate component in the compositions of the present invention. The weight ratio of TMS to TDS in such mixtures can range from about 97:3 to 20:80, more preferably from 95:5 to 40:60.

As indicated, the procedure used to prepare the admixture of TMS and TDS involves the calcium catalyzed reaction of a maleic acid salt and a tartaric acid salt. Such a process involves the formation of an aqueous reaction mixture containing, as reactants, from about 20% to 60% by weight of both calcium and monovalent salts of maleic acid and tartaric acid. Such a reaction mixture corresponds to the over-neutralized mixture which is formed by combining maleic and tartaric acids in a molar ratio of from about 0.5:1 to about 8:1, along with particular amounts of a source of calcium cations and a neutralizing agent comprising an hydroxide of a monovalent cation. The source of calcium cations, preferably calcium hydroxide, is added to the reaction mixture in a mole ratio of calcium to tartaric acid with the ranges of from about 0.1:1 to 2:1 with the proviso that the moles of calcium added not exceed the total moles of maleic and tartaric acids added. The monovalent neutralizing agent is added in an amount such that the ratio of moles of monovalent cations to (moles of tartaric acid + moles of maleic acid - moles of calcium cations) ranges from about 2.1:1 to about 3.8:1. Such a reaction mixture is maintained at a temperature of from about 20° C. to 120° C. for a period of time sufficient to form a reaction product mixture containing both (a) tartrate monosuccinic acid salt, and (b) tartrate disuccinic acid salt. Such a reaction product mixture is thereafter treated to reduce its calcium content to the extent that the molar ratio of calcium to tartrate succinate compounds therein is less than about 1:10.

TMS, TDS and their admixture, as well as procedures for their preparation, are described in greater detail in the concurrently filed, copending application of Bush, Connor, Heinzman and Mackey having U.S. Ser. No. 823,909. This application is incorporated herein by reference.

The ether carboxylate sequestering agent will generally comprise from about 70% to 99% by weight of the builder compositions. More preferably this ether carboxylate will comprise from about 80% to 95% by weight of the builder compositions. Most preferably, the ether carboxylate component will comprise from about 85% to 92% by weight of the builder compositions herein.

The second essential component of the builder compositions herein comprises one or more selected types of dispersing/anti-redeposition agents. These selected types of dispersing/anti-redeposition agents include (1) certain types of polycarboxylate materials and (2) certain types of ethoxylated amine materials.

The polycarboxylate materials which can be employed as the dispersing/anti redeposition agent component herein are these polymers or copolymers which contain at least about 60% by weight of segments with the general formula

